

WHAT IS CLAIMED IS:

1. A component image pickup apparatus including:

a component holding head which has a plurality of component holding members and for moving in a movement
5 direction; and

an image pickup camera for picking up an image of each of components held by the component holding members,

the image pickup camera comprising:

a plurality of image pickup devices arranged
10 corresponding to a plurality of paths respectively where the component holding members pass by the movement in the movement direction, for picking up the images of the components held by the component holding members;

single illuminator arranged for the plurality of
15 image pickup devices for applying light at an image pickup operation by each image pickup device; and

an image pickup controller for controlling the image pickup operation to each image pickup device and the illuminator in accordance with an image pickup condition
20 related to each image pickup device and set for every component and an illumination condition related to the illuminator.

2. The component image pickup apparatus according to
25 claim 1, further comprising a recognizer connected to the

image pickup camera for supplying the image pickup condition and the illumination condition to the image pickup controller before the component holding head reaches above the image pickup camera, controlling the image pickup operation to each image pickup device and the illuminator, and receiving image information from each image pickup device after the imaging.

3. The component image pickup apparatus according to claim 1, wherein the image pickup devices are disposed at respective setting positions where the image pickup devices pick up the images of components one by one with a time difference in accordance with the movement of the component holding members in the movement direction.

4. The component image pickup apparatus according to claim 2, wherein the image pickup devices are disposed at respective setting positions where the image pickup devices pick up the images of components one by one with a time difference in accordance with the movement of the component holding members in the movement direction.

5. The component image pickup apparatus according to Claim 3, wherein the setting positions of a first image pickup device and a second image pickup device for imaging

next to the first image pickup device are disposed at positions separated by at least a distance which is obtained by multiplying a moving velocity in the movement direction of the component holding head and an exposure
5 time at the first image pickup device.

6. The component image pickup apparatus according to Claim 4, wherein the setting positions of a first image pickup device and a second image pickup device for imaging
10 next to the first image pickup device are disposed at positions separated by at least a distance which is obtained by multiplying a moving velocity in the movement direction of the component holding head and an exposure time at the first image pickup device.

15

7. The component image pickup apparatus according to claim 1, wherein the component holding members are arranged at equal intervals along a circumference, while the movement direction is a direction parallel to a diametrical
20 direction of the circumference and passing through two of the component holding members arranged at the equal intervals.

8. The component image pickup apparatus according to
25 claim 2, wherein the component holding members are arranged

at equal intervals along a circumference, while the movement direction is a direction parallel to a diametrical direction of the circumference and passing through two of the component holding members arranged at the equal
5 intervals.

9. The component image pickup apparatus according to claim 3, wherein the component holding members are arranged at equal intervals along a circumference, while the
10 movement direction is a direction parallel to a diametrical direction of the circumference and passing through two of the component holding members arranged at the equal intervals.

15 10. The component image pickup apparatus according to claim 4, wherein the component holding members are arranged at equal intervals along a circumference, while the movement direction is a direction parallel to a diametrical direction of the circumference and passing through two of
20 the component holding members arranged at the equal intervals.

11. The component image pickup apparatus according to claim 5, wherein the component holding members are arranged
25 at equal intervals along a circumference, while the

movement direction is a direction parallel to a diametrical direction of the circumference and passing through two of the component holding members arranged at the equal intervals.

5

12. The component image pickup apparatus according to claim 6, wherein the component holding members are arranged at equal intervals along a circumference, while the movement direction is a direction parallel to a diametrical direction of the circumference and passing through two of the component holding members arranged at the equal intervals.

13. A component image pickup method comprising:
15 supplying an image pickup condition and an illumination condition necessary for imaging each of components and set for every component to an image pickup camera while a component holding head with a plurality of component holding members moves to above the image pickup camera which has a plurality of image pickup devices for
20 imaging respective components held by the component holding members, and single illuminator;

letting the component holding head pass above the image pickup camera along a movement direction without
25 stopping the head after the supplying; and

sequentially imaging the components by the respective image pickup devices during the passing with a timing whereby effects of light for imaging of the illuminator are avoided.

5

14. A component mounting apparatus comprising:

a component image pickup apparatus;

a component holding head having a plurality of component holding members respectively for holding
10 electronic components and mounting the held electronic components to a circuit board;

a drive unit for moving the component holding head in a movement direction; and

a circuit board holding unit for holding the
15 circuit board,

the component image pickup apparatus including:

an image pickup camera for picking up an image of each of components held by the component holding members,

the image pickup camera having:

20 a plurality of image pickup devices arranged corresponding to a plurality of paths respectively where the component holding members pass by the movement in the movement direction, for picking up the images of the components held by the component holding members;

25 single illuminator arranged for the plurality of

image pickup devices for applying light at an image pickup operation by each image pickup device; and

an image pickup controller for controlling the image pickup operation to each image pickup device and the illuminator in accordance with an image pickup condition related to each image pickup device and set for every component and an illumination condition related to the illuminator.